

Massachusetts State Sustainability Fact Sheet #1

M E R C U R Y I S S U E S

M A N A G E M E N T A N D A L T E R N A T I V E S

Dear Friends:

This fact sheet is designed to help state and other public officials navigate the multitude of issues associated with mercury, a highly toxic element of grave concern to Massachusetts residents. This fact sheet contains information on:

- Problems associated with mercury
- The Commonwealth's commitment to reducing mercury pollution
- Minimizing mercury's health and environmental impacts
- Proper handling, recycling and disposal of waste mercury products
- Common mercury products and safer alternatives
- Mercury spill clean up procedures
- Where to go for more information

This fact sheet is one in a series produced by the State Sustainability Program, established by Executive Order in July, 2002, whose mission is to promote sound environmental practices at state agencies. I look forward to working with you to reduce and eventually eliminate man-made mercury from our environment.

Sincerely,



Bob Durand
Secretary, EOEA



PUBLIC LEADERSHIP,
STEWARDSHIP, COMMITMENT

www.mass.gov/envir/sustainable

The Commonwealth's Commitment

In June 1998, the New England Governors and the Eastern Canadian Premiers (NEG-ECP) unanimously adopted a comprehensive regional Mercury Action Plan (www.cmp.ca/press-neg.htm) calling for the virtual elimination of anthropogenic mercury releases. Interim mercury reduction goals of 50% by 2003 and 75% by 2010 were also established. Massachusetts played an important role in developing the NEG-ECP Mercury Action Plan and has adopted its own state-wide Zero Mercury Strategy.

(www.mass.gov/envir/mercury.htm)

By 2003 Massachusetts will have reduced mercury emissions by more than 60%. But there is much more that needs to be done.

Why it's a Problem

Mercury is toxic to people and wildlife. It can cause damage to the brain, liver and kidneys, as well as developmental disorders in children. More than 400,000 newborn children in the U.S. are exposed to potentially unsafe levels of mercury each year.

Products that contain mercury are found in our own workplaces, homes and schools—in switches, thermometers, thermostats, blood pressure devices, button batteries and many other products. Once released, mercury enters into lakes, ponds, streams and the ocean and concentrates in fish.

When disposed of improperly, products that contain mercury can contribute to mercury pollution. Mercury can be released into the air when products are broken and from incinerators and landfills. Mercury can be released into the air when products are broken, incinerated or landfilled.

Over forty percent of the lakes and ponds tested in Massachusetts have one or more types of fish with unsafe levels of mercury. Several types of saltwater fish are also affected.

People can be exposed to mercury by eating mercury-contaminated fish and by inhaling vapors released when mercury products are broken. Pregnant women, women of childbearing age who may become pregnant, nursing mothers and young children need to be especially careful to prevent mercury exposure.



The Commonwealth of Massachusetts
Jane M. Swift, Governor

Executive Office of Environmental Affairs
Bob Durand, Secretary

Minimizing Environmental and Health Impacts

Steps We Can All Take

Step 1: When possible, buy products containing little or no mercury, such as non-mercury thermometers and thermostats and products with mechanical or electronic switches. This eliminates the potential for direct exposure to mercury vapors from broken or leaking products and reduces mercury pollution. See the table on the next page for more information on non-mercury products.

Step 2: Recycle all products that contain mercury when you are finished with them. Never dispose of unwanted mercury products in the trash, outdoors or down drains. Most of these products are hazardous wastes, and it is illegal for a state or municipal agency to improperly dispose of them. See the table on the next page for information about recycling mercury products using the state contract.

Step 3: Properly clean up mercury spills. See the back page for information about cleaning up spills.

Step 4: To further reduce you and your family's exposure to mercury learn about and follow fish consumption advisories. For more information see: www.mass.gov/dph/beha/mercury/pam-phlet.pdf



Handling Unwanted Mercury Products for Recycling or Disposal

Many waste products that contain mercury are considered hazardous waste and should not be disposed of in the regular trash or down the drain. Some of these products, such as intact mercury devices (e.g., thermostats, switches and thermometers) and fluorescent lamps may be handled as universal wastes, a special designation of hazardous waste with streamlined requirements. Elemental mercury, spilled mercury or broken items that contain mercury should be handled as hazardous wastes.

Prior to recycling or disposal, save waste mercury or devices in two sealed, unbreakable containers in a safe place. Label the containers "Universal Waste, Mercury-Containing Devices, Date Stored" or "Hazardous Waste, Mercury, Toxic, Date Stored" as appropriate.

For more information on handling, storage, transport and recordkeeping requirements for hazardous and universal wastes, see the following fact sheets on the Massachusetts Department of Environmental Protection website:

- "Summary of Requirements for Small Quantity Generators of Hazardous Wastes," www.mass.gov/dep/bwp/dhm/files/sqg-sum.pdf
- "Universal Waste Rule in Massachusetts," www.mass.gov/dep/recycle/files/univrul.doc
- "Fluorescent Lamp Management for Businesses and Institutions," www.mass.gov/dep/files/lamps.htm

To recycle waste mercury devices and lamps use MA Contract FAC26 Fluorescent Lamp and CRT Recycling Contract. Hazardous wastes can be disposed of using MA Contract ST9J213A, Hazardous Material Collection Services.

Leading By Example:

Shattuck Hospital Working to Eliminate Mercury

After several mercury spills and expensive clean-ups, the Lemuel-Shattuck Hospital, located in Jamaica Plain, embarked on a comprehensive mercury elimination program. The effort was spearheaded by the Safety Committee and Facilities Department and began with a hospital-wide inventory of all devices, products and equipment that contained mercury.

Hospital personnel identified dozens of items that contained mercury, including sphygmomanometers, thermometers, Miller Abbott tubes, pressure switches and x-ray chemicals. Areas in the inventory included outpatient and contract vendor services areas, dental services, the power plant, electrical services, and the pathology and laboratory areas.

Many mercury items, such as thermometers, were removed and recycled.

Other items, such as x-ray chemicals, were targeted for mercury-free purchases in the future. Items, such as switches found in the power plant and HVAC systems, were tagged for removal and mercury-free substitution when the power plant is renovated. In addition to these efforts, the Shattuck hospital has demonstrated its commitment to public health by recycling fluorescent lamps and batteries for over five years.

Common Mercury Products, Alternatives and Massachusetts Contract Information

	Product	Description	Alternatives	Massachusetts State Contract Info
Building and Industrial Supplies	Fluorescents lamps	Fluorescent lamps are a good environmental choice, using less electricity than incandescent lighting.	There are no non-mercury or HID fluorescent lamps.	<ul style="list-style-type: none"> • Purchase lighting using MA Lighting Contract FAC22. • Recycle fluorescent and HID bulbs using MA Fluorescent Lamp Recycling Contract FAC26.
	High intensity discharge (HID) lamps	Mercury vapor, metal halide, and high-pressure sodium lamps are commonly used in security, outdoor and warehouse applications; recently used for indoor office lighting.		
	Mercury thermostats	Contain one to many ampoules with a silver liquid which is elemental mercury.	Air-controlled, reed switch, vapor-filled diaphragm, snap-switch and programmable electronic	<ul style="list-style-type: none"> • Ask for non-mercury thermostats on MA Building Supply Contract FAC02 (FAC27 after 12/31/02) and MA Industrial Supply Contract FAC04 (FAC28 after 12/31/02). • Recycle mercury thermostats using MA Fluorescent Lamp Recycling Contract FAC26.
	Mercury switches and relays	Tilt switches, float control switches, displacement/plunger relays may contain elemental mercury if no mechanical switch is obvious.	Mechanical and electronic systems	<ul style="list-style-type: none"> • Ask for non-mercury switches and relays when buying products on MA Building Supply Contract FAC02 (FAC27) and MA Industrial Supply Contract FAC04 (FAC28). • Recycle mercury switches using MA Fluorescent Lamp Recycling Contract FAC26
	Mercury thermostat probes and flame sensors	Gas-fired appliances with pilot lights such as ranges, ovens, clothes dryers, water heaters, furnaces contain a small amount of elemental mercury in the flame sensors and thermostat probes.	Electronic appliances	<ul style="list-style-type: none"> • Purchase gas appliances with electronic ignitions using MA Appliance Contract FAC12. • When recycling gas-fired appliances with pilot lights, make sure that the white goods hauler will remove the mercury component prior to crushing.
	Mercury barometers and manometers, devices that measure pressure	If silver liquid is visible, it's elemental mercury.	Aneroid and electronic	<ul style="list-style-type: none"> • Non-mercury manometers are available on the MA Industrial Supplies Contract FAC04 (FAC28). • Recycle mercury devices using MA Fluorescent Lamp Recycling Contract FAC26.
Medical and Laboratory Products	Mercury fever thermometers	Thermometers with the silver bulb that are not labeled "mercury-free" contain elemental mercury.	Electronic, dot matrix, gallium-indium-tin liquid	<ul style="list-style-type: none"> • Contractors on MA Medical Supply Contract HSP16 cannot sell devices that contain mercury unless a non-mercury alternative is not available. • Recycle mercury devices using MA Fluorescent Lamp Recycling Contract FAC26.
	Mercury blood pressure equipment	Units with visible silver liquid in the column contain elemental mercury.	Aneroid and electronic	
	Mercury in topical disinfectants	Mercury compounds are present if the label indicates mercurochrome, tincture of merthiolate, or other chemical compound with the prefix merc- or mer-	Alcohol and hydrogen peroxide	<ul style="list-style-type: none"> • For disinfectants, ask for non-mercury alternatives. See EPP Cleaners Contract GRO16 when it is awarded as of November 1, 2002.
	Mercury in preservatives	Mercury compounds are present if the label indicates thimerosal, merthiolate or a specific mercury compound (e.g., mercury chloride) in contact lens solution, nasal spray and vaccines.	Preservative-free and non-thimerosal products	<ul style="list-style-type: none"> • For preservatives, ask your supplier for non-mercury alternatives.
	Mercury laboratory thermometers	Thermometers with the silver bulb contain elemental mercury.	Alcohol, mineral spirits and electronic	<ul style="list-style-type: none"> • Ask for non-mercury thermometers from vendors on MA Laboratory and Monitoring Products Contract HSP13 and MA Industrial Supplies Contract FAC04 (FAC28). • Recycle mercury thermometers using MA Fluorescent Lamp Recycling Contract FAC26.
Vehicles	Mercury switches and HID headlamps in vehicles	Certain vehicles may contain mercury tilt switches for trunk and hood lights, and 4-wheel drive anti-lock braking systems. HID headlamps are also used in some vehicles.	Many foreign and domestic vehicle manufacturers have stopped using mercury switches.	<ul style="list-style-type: none"> • Replace with non-mercury switches available through Industrial Supplies Contract FAC02 (FAC28) or make sure that recycler will remove mercury components prior to crushing.

Note: This table is not a complete list of products that may contain mercury.

Mercury Spill Cleanup: Every Drop Counts

Spilled mercury will evaporate and give off hazardous vapors that are invisible and odorless. All facilities that handle mercury devices or equipment should obtain a mercury spill kit and employees should be trained on its use. Mercury spill kits can be obtained on MA Contract FAC26.

Step 1. Take Immediate Precautions

Do not touch the mercury. Open windows to ventilate the area. Lower the room temperature to reduce evaporation. Evacuate others from the room. Be sure not to step on the mercury and keep people and animals away from the spill.

Step 2. Seek Professional Help

If more than one pound (equal to two tablespoons) has spilled, you are required to contact the Department of Environmental Protection. Call 888-304-1133 immediately and they will instruct you on proper clean up, which may require contacting a professional emergency response service.

Step 3. Contain the Spill

Move objects away from the spill and prevent the mercury from flowing into drains, cracks or crevices. Wide tape or absorbent cloth might be useful for this purpose.

Step 4. Never Vacuum or Sweep up the Spilled Mercury

Vacuuming or sweeping will spread mercury throughout the building and permanently contaminate your vacuum or broom. Vacuums or brooms inadvertently used to clean up mercury spills should be disposed of as hazardous waste.

Step 5. Clean up the Spill

Follow the instructions on your mercury spill kit. If a spill kit is not available, follow the instructions given at: www.mass.gov/dep/recycle/files/spill.pdf. Briefly, put on gloves and use index cards or an eyedropper to scoop up the mercury. Place the mercury and materials that contacted it in an unbreakable container. The mercury and anything that may have absorbed it must be disposed of as hazardous waste.

Additional Resources and Contact Information

Massachusetts Mercury Hotline:
1-866-9MERCURY (1-866-963-7287)

Commonwealth Procurement Access and Solicitation System:
www.comm-pass.com

Massachusetts Environmentally Preferable Products Program website:
www.mass.gov/osd/enviro

"Mercury Elimination" on the Massachusetts Office of Executive Affairs website:
www.mass.gov/envir/mercury.htm

Mercury information on the Massachusetts Department of Environmental Protection website:
www.mass.gov/dep/bwp/hgres.htm

Fish advisories on the Massachusetts Department of Public Health website:
www.mass.gov/dph/beha/mercury/merchp.htm

Fish advisories on the US Food and Drug Administration website:
www.cfsan.fda.gov/seafood1.htm

"Mercury in Building Products" on the Burlington, Massachusetts Board of Health: website:
<http://208.58.133.9/health/Mercury.htm>

INFORM, Inc.
www.informinc.org/PBT

Mercury switches in vehicles and replacement information:
www.cleancarcampaign.org

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